

## Factors associated with patient safety implementation based on safety attitudes questionnaire in accredited hospital Jambi City Indonesia

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### Abstract

**Background:** The nursing service are influenced by the behavior nurses in implementation of patient safety the contributes to adverse event or incident patient safety in accredited public hospital. This study aims to analyses most dominant determinant factors associated with patient safety implementation based on safety attitudes questionnaire (SAQ) in accredited hospital.

**Methods:** This study is a cross sectional study with quantitative method conducted on nurses who work in accredited hospital. Samples of 190 nurses were included in this study by using proportional random sampling technique. The data were analyzed by using multiple logistic regression with backward LR method.

**Results:** Total 190 participant were (22.1%) males and 148 (77.9%) females. Most participant had completed Diploma of vocational education 157 (82.6%). The most dominant factors associated with implementation of patient safety base on Safety Attitude Questionnaire is the work environment factor ( $p < 0.001$ ; OR 3.187).

**Conclusion:** It is proven that a good work environment factor will improve the behavior of nurses in implementing patient safety. This research recommends to develop policy toward evaluation effort of implementation patient safety, as well as evaluation of all nursing procedures in terms of patient safety consideration to external or internal work environment.

**Key Words:** Accredited Hospital, Patient Safety, Safety Attitude Questionnaire (SAQ), Work Environment

### Abstrak

**Latar Belakang:** Keselamatan pasien merupakan bagian penting dalam pelayanan keperawatan dan menjadi indikator bagi mutu pelayanan rumah sakit. Penelitian ini bertujuan untuk menganalisis faktor-faktor penentu yang paling dominan yang terkait dengan pelaksanaan keselamatan pasien berdasarkan *Safety Attitude Questionnaire* (SAQ) di rumah sakit terakreditasi.

**Metode:** Penelitian ini merupakan penelitian *cross sectional* dengan metode kuantitatif dilakukan pada perawat yang bekerja di rumah sakit yang terakreditasi. Sampel berjumlah 190 perawat dengan menggunakan teknik proporsional random sampling. Data dianalisis dengan menggunakan regresi logistik berganda dengan metode Backward LR.

**Hasil:** Dari 190 peserta sebanyak 148 (77,9%) perempuan. Sebagian besar berpendidikan Diploma 157 (82,6%). Faktor yang paling dominan terkait dengan penerapan keselamatan pasien pada *Safety Attitude Questionnaire* adalah faktor lingkungan kerja ( $p < 0,001$ ; OR 3,187).

**Kesimpulan:** Faktor lingkungan kerja yang baik akan meningkatkan perilaku perawat dalam menerapkan keselamatan pasien. Penelitian ini merekomendasikan untuk mengembangkan kebijakan terhadap upaya evaluasi pelaksanaan keselamatan pasien, serta evaluasi semua prosedur keperawatan dalam hal pertimbangan keselamatan pasien untuk lingkungan kerja eksternal atau internal.

**Kata Kunci:** Rumah Sakit Terakreditasi; Keselamatan Pasien; *Safety Attitude Questionnaire* (SAQ), Lingkungan Kerja

## BACKGROUND

Patient safety is a vital and important component of care and measures to improve the quality of service (1,2). Assessment of hospital quality is obtained through an accreditation system, one of which is patient safety goals as a priority for health services worldwide (3,4). One step to improve the quality of service through the implementation of patient safety in the hospital.

Based on several studies in the measurement of patient safety reporting at several hospitals in the world that have been accredited by Join Commission International (JCI). The research Pham, JC. et al., (5) of conducted in 11 hospitals from 5 countries there are 52 incident patient.safety those are Hong Kong 31%, Australia 31%, India 23%, America 12% and Canada 10% While in Brazil the incident of adverse event in hospitals is estimated at 7,6% (6). Some of the results of this study that patient safety incidents are still widely found in various countries including in Indonesia.

Based on several studies related to the implementation of patient safety in hospitals that have been accredited 2012 version in Indonesia. the research of Nurmalia (7) in the public hospital in Semarang that 56,2% mentoring the implementation of patient safety is still not good, whereas in Panti Waluya Sawahan private hospital by Harus Bernadeta (9) reported KTD 9 incident (41%), KNC 6 incident (27%), KPC 5 incident (23%), KTC 2 incident (9%). Data on patient safety incidents are still widely found in both public and private hospitals, although they have passed the accreditation, which can have negative impact health service.

Impact caused by hospitals do not apply patient safety can be a decrease in hospital service quality. Research by Swift (10) in United States hospital found that patients who experienced KTD incident resulted in a loss of about \$ 500.000 or insured \$1 million per error. A study by Gerven et al., (11) that about 15% of healthcare professionals consider leaving

the profession due to a mistake made. These health professionals are more likely to be experienced by nursing services.

The behavior of nurses in apply patient safety is influenced by various factors that contribute to the patient safety incident. Safety Attitudes Questionnaire (SAQ) there are 6 domains in the value those are; team work climate, safety climate, job satisfaction, perception of management, stress recognition and work environment. It is also revealed by Anderson & Kodate (12) which states that factors influencing patient safety involved organizational factors, safety culture and manager style. The aims of this study were to most dominant determine factors associated with patient safety implementation based on safety attitudes questionnaire (SAQ) in accredited hospital, Jambi city, Indonesia.

## METHOD

### Study design

A cross-sectional study was conducted to most dominant determine factors associated with patient safety implementation based on safety attitudes questionnaire (SAQ) in accredited hospital, Jambi city, Indonesia.

### Population and Sample

The population in this study are nurses who work in accredited hospital with a version of the hospital accreditation committee and joint commission international in Jambi city, amounting to 355 nurses. The results of the calculation of the number of samples in this study were 190 nurses. A simple random sampling was used to select nurses. Inclusion criteria are; (1) minimum 6 months working period (2) Served in the inpatient room, (3) Served as Primary Nurse and Associate Nurse.

### Measurement

The questionnaire consisted of two parts; part 1 general demographic information such as age, sex and education. Part 2 the instrument to measure the most

dominant factor of patient safety application using Safety Attitude Questionnaire (SAQ). The SAQ was specifically to measure patient safety. The SAQ instrument consists of six factors; team work climate, safety climate, job satisfaction, perceptions of management, stress recognition and work environment. Each item is measured on a 5-point Likert scale (Agree strongly to Disagree strongly), which is then converted to a 0-100 scale. Each factor score equals the mean score of its component survey item. A positive score is defined as  $\geq 75$  out of 100. To calculate as a positive score for a given factor, the survey respondent must answer, on average, agree slightly or higher to all related item.

### Ethical consideration

This research has been approved by Ethics Commission of Faculty of Medicine, Andalas University, West Sumatra, Indonesia (No. 347/KEP/FK/2017). Principles of ethics based on health ethical guidelines issued by National Commission on Health Research Ethics. Then do informed consent to participate as a research subject after obtaining a complete and open explanation from the researcher about the overall implementation of the study. Data was conducted during September to October 2017.

### Data analysis

Data were analyzed by using statistical analysis with Statistical Package for the Social Sciences (SPSS) versi 16. The population characteristic was described by frequency and percentage. Multiple logistic regression was performed to most dominant determine factors associated with patient safety implementation based on safety attitudes questionnaire (SAQ) in accredited hospital. The independent variable that associated with intention to leave in bivariate test was include in model. The variables were selected in the final backward model. A *p*-value of less than 0.05 was considered as statistically significant.

### RESULTS

Total 190 participants were (22.1%) males and 148 (77.9%) females, average age  $35.2 \pm 13.1$  years old. Most participants had completed Diploma of vocational education 157 (82.6%) (Table 1). Based on the results (Table 2) showed that the most dominant factor associated with implementation of patient safety base on Safety Attitude Questionnaire (SAQ) is the work environment (*p* 0,001; OR 3.187) after being controlled by safety climate factor (*p* 0.019; OR 2.174).

Table 1 Characteristics Respondent (n=190)

Demography	<i>f</i>	%
Age (Years)		
≤ 25	38	20
26 – 35	68	35.8
36 – 45	75	39.5
≥ 46	9	4.7
Sex		
Male	42	22.1
Female	148	77.9
Education		
Diploma of vocational education	157	82.6
Bachelor degree	33	17.4

Table 2 Multiple logistic regression analysis of the most dominant factors associated with patient safety implementation based on safety attitudes questionnaire (SAQ) in accredited hospital (n=190)

Model	Factors	B	Wald	Adj. OR	p-value
Step 1	Team work climate	0.211	0.250	1.235	0.617
	Safety climate	0.802	4.347	2.231	0.037
	Job satisfaction	-0.676	2.424	0.509	0.120
	Stress recognition	0.608	2.939	1.836	0.086
	Perception of management	-0.021	0.003	0.980	0.958
	Work environment	1.231	11.129	3.426	0.001
	Constanta	-1.833	30.947	0.160	0.000
Step 2	Team work climate	0.207	0.249	1.230	0.617
	Safety climate	0.799	4.401	2.224	0.036
	Job satisfaction	-0.678	2.474	0.508	0.116
	Stress recognition	0.607	2.936	1.835	0.087
	Work environment	1.226	11.828	3.408	0.001
	Contanta	-1.835	31.194	0.160	0.160
	Safety climate	0.821	4.716	2.273	0.030
Step 3	Job satisfaction	-0.609	2.247	0.544	0.134
	Stress recognition	0.618	3.060	1.854	0.080
	Work environment	1.257	12.735	3.513	0.000
	Contanta	-1.833	31.115	0.160	0.160
Step 4	Safety climate	0.610	3.068	1.840	0.080
	Stress recognition	0.537	2.407	1.712	0.121
	Work environment	1.131	11.186	3.098	0.001
	Constanta	-1.812	31.177	0.163	0.000
Step 5	Safety climate	0.777	5.536	2.174	0.019
	Work environment	1.159	11.933	3.187	0.001
	Constanta	-1.163	30.789	0.199	0.000

## DISCUSSION

Based on this multivariate analysis using backward LR method with the result of candidate selection on six variables, it is found that the most dominant variable related to the application of accredited hospital patient safety is the working environment variable (Adj. OR 3.187; p-value 0.001). the result of analysis is meaning the application of patient safety is controlled by the work environment, that the implementation of patient safety is controlled by work environment, if the work environment is improved then the implementation of patient safety will increase by 3.187 times compared to poor work environment.

This is research also in line with research by Ghada et al., (13) found in his study that more than half of nurses (57.9%) rated lower safety rates as being affected by poor work environments. *Canadian Nurses*

*Association* (14) states that a healthy nursing work environment is defined as a safe, empowering and satisfactory workplace, where all nursing staff work diligently for optimal health and safety. Work environment includes basic knowledge, demography, latest technology, economic pressure, health policy, public awareness and political climate. External pressures have much to do with improving implementation of patient safety. External pressure can be a lawsuit, public demand for quality and patient safety. External environment is a thing that is needed for the organization can have a high commitment in applying quality through patient safety (15). Other external environmental pressures through national regulations on human resource competencies in health services (professional standardization, staff competency assessment, certification) and for institutions in hospital accreditation (16).

Based on the analysis of answers delivered by nurses, the management of accredited hospitals in the city of Jambi has been enough to improve human resources, this condition can be seen in the form of nurses statement about the work environment of accredited hospitals found most nurses stated that the hospital work environment has done a good job to train new personnel related patient safety.

Based on the statement of the nurses, it is seen that the accredited Hospital in Jambi City has implemented the important elements in implementation of patient safety by always carrying out supervision related to patient safety target training. However, in the implementation of individuals has a great responsibility to the safety of patients so that management needs to consider related to the pattern of resources needed in providing services thus the application of patient safety becomes more effective.

The problems that still cannot be resolved in every hospital both government and private that have passed the accreditation, one of which is the pattern of labor needs, according to the nurse's statement that almost half the nurses stated if the hospital staffing level is not sufficient enough to handle the number of patients, in Austin, M, et al., opinion (17) ensures that nurses and patient satisfaction will improve in a good working environment. However, there are negative factors such as increased workload, insufficient number of nurses, communication problems, insufficient equipment and lack of managerial support.

In a study conducted in several countries reported that assessment of common problems related to the quality of patient care and the application of patient safety. Although there are differences in health, funding and resource delivery but the researches recommend that work environment factor should be improved to ensure the retention of qualified nursing personnel and advance patient care outcomes regarding the application of patient safety (18).

## CONCLUSION

Work environment is the dominant factor associated with the implementation of patient safety at accredited hospital in Jambi city Indonesia. Effort to improve patient safety require a nurse awareness raising strategy for the importance of applying patient care by upholding the right of patients. Less supportive working conditions for the implementation of patient safety may be influenced by the number and quality of human resources and facilities available for the implementation of patient care

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